WHAT IS CLAIMED IS:

1. A method for *ex-vivo* treatment of whole blood, comprising: treating the whole blood with carbon monoxide.

2. The method of claim 1, wherein the whole blood is freshly drawn from a donor.

3. The method of claim 1, wherein said treating comprises placing the whole blood in an atmosphere containing at least about 40% carbon monoxide.

4. The method of claim 3, wherein said atmosphere contains a majority of carbon monoxide.

5. The method of claim 4, wherein said atmosphere contains at least about 90% carbon monoxide.

6. The method of claim 5, wherein said atmosphere contains at least about 99% carbon monoxide.

7. The method of claim 6, wherein said atmosphere contains about 100% carbon monoxide.

8. The method of claim 5, wherein said atmosphere also contains oxygen.

9. The method of claim 1, wherein said treated whole blood is stored at a suitable temperature.

10. The method of claim 9, wherein said treated whole blood is stored for up to about 10 days.

11. The method of claim 1, wherein said treated whole blood is divided into at a plurality of blood fractions.

12. The method of claim 11, wherein at least one blood fraction is further treated with carbon monoxide.

13. The method of claim 1, further comprising:

promoting exchange of carbon monoxide in said treated whole blood with oxygen.

14. The method of claim 13, wherein said promoting further comprises:

illuminating said treated whole blood with light having a wavelength of at least 400 nm in a presence of oxygen.

15. The method of claim 14, wherein said oxygen is present in an amount of at least 10% of total gases.

16. The method of claim 13, wherein said promoting is performed by exposing said treated whole blood to air.

17. A method for treating a platelet-containing fraction of blood, comprising:

treating the platelet-containing fraction of blood with carbon monoxide.

18. The method of claim 17, wherein said treating includes replacing all gases with pure carbon monoxide.

19. The method of claim 17, wherein said treating further comprises:

treating whole blood with carbon monoxide;

separating said whole blood into at least one platelet-containing fraction; and

treating said at least one platelet-containing fraction with carbon

monoxide.

20. The method of claim 17, wherein the platelet-containing fraction includes at least one of PRP and PC fractions.

21. The method of claim 17, wherein said treating further comprises:

adding a pH buffering substance to the platelet-containing fraction.

22. The method of claim 21, wherein said pH buffering substance is a basic pH buffering substance.

23. The method of claim 22, wherein said basic pH buffering substance includes sodium bicarbonate.

24. The method of claim 23, further comprising:

promoting exchange of carbon monoxide in said treated platelet-containing fraction with oxygen.

25. The method of claim 24, wherein said promoting further comprises:

illuminating said treated platelet-containing fraction with light having a wavelength of at least 400 nm in a presence of oxygen.

26. The method of claim 23, wherein said oxygen is present in an amount of at least about 10% of total gases.

27. The method of claim 24, wherein said promoting is performed by exposing said treated platelet-containing fraction to air.

28. The method of claim 27, wherein said carbon monoxide is present at a concentration in a range of from about 40% to about 100%.

29. A method for treating a plasma fraction of blood, comprising:

treating the plasma fraction of blood with carbon monoxide.

30. The method of claim 29, wherein the plasma fraction is substantially cell free.

31. A method for inhibiting bacterial growth in a platelet-containing fraction of blood, comprising:

treating the platelet-containing fraction of blood with carbon monoxide.

32. A method for increasing storage stability of a platelet-containing fraction of blood, comprising:

treating the platelet-containing fraction of blood with carbon monoxide; and

adding a pH-buffering substance to the platelet-containing fraction of blood.

33. A method for treatment of at least one of whole blood and a platelet-containing fraction of blood, comprising:

treating the at least one of whole blood and the platelet-containing fraction of blood with carbon monoxide to form a treated blood product; and

promoting exchange of carbon monoxide in said treated blood product with oxygen.

34. The method of claim 33, wherein said promoting further comprises:

illuminating said treated blood product with light having a wavelength of at least 400 nm in a presence of oxygen.

35. The method of claim 34, wherein said oxygen is present in an amount of at least 10% of total gases.

36. The method of claim 35, wherein said promoting is performed by exposing said treated blood product to air.

37. A method for determining viability of at least one of whole blood and a platelet-containing fraction of blood after storage, comprising:

determining ability of the at least one of whole blood and the platelet-containing fraction of blood to aggregate in response toan agonist, wherein aggregation is a measure of viability.

38. The method of claim 37, wherein the at least one of whole blood and the platelet-containing fraction of blood are treated with carbon monoxide to form a treated blood product before storage.

39. The method of claim 38, wherein before said determining ability of the at least one of whole blood and the platelet-containing fraction of blood to aggregate in response to collagen, the method comprises:

promoting exchange of carbon monoxide in said treated blood product with oxygen.

40. The method of claim 37, wherein said agonist comprises collagen.